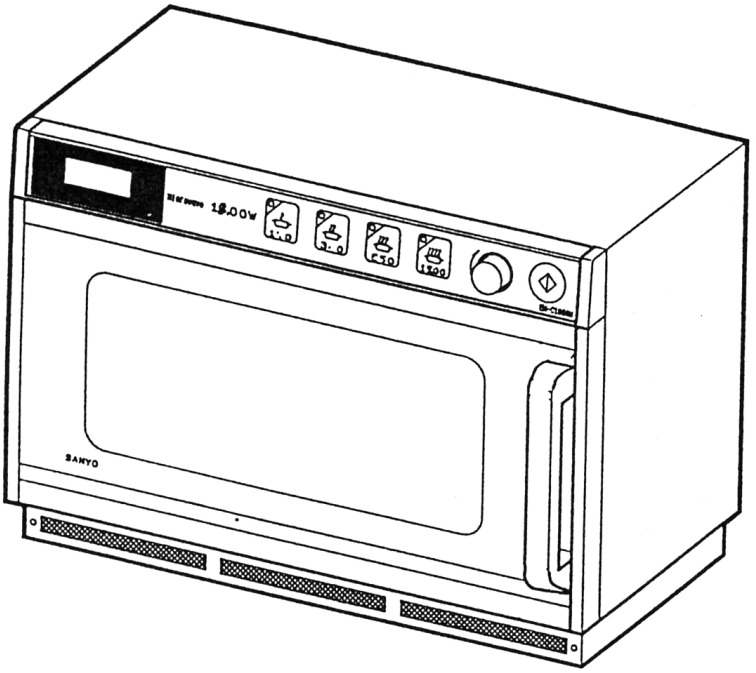
SERVICE MANUAL Microwave Oven EM-C1900M(UK)



Pro.Code No.	Model No.
437 624 00	EM-C1900MUK

Foreword

Read this manual carefully, especially precaution on microwave energy, and follow the procedure strictly, careless servicing and testing may expose yourself to the microwave energy leakage.

PRECAUTIONS

PRECAUTIONS TO BE OBSERVED BEFORE AND DURING SERVICING TO AVOID POSSIBLE EXPOSURE TO EXCESSIVE MICROWAVE ENERGY

(a) Do not operate or allow the oven to be operated with the door open.
(b) Make the following safety checks on all ovens to be serviced before activating the magnetron or other microwave source, and make repairs as necessary:
(1)Interlock operation, (2) proper door closing, (3) seal and sealing surfaces (arcing, wear, and other damage), (4) damage to or loosening of hinges and latches, (5) evidence of dropping or abuse.
(c) Before turning on microwave power for any service test or inspection within the microwave generating compartments, check the magnetron, wave guide or transmission line, and cavity for proper alignment, integrity, and connections.
(d) Any defective or misadjusted components in the interlock, monitor, door seal, and microwave generation and transmission systems shall be repaired replaced, or adjusted by procedures described in this manual before the oven is released to the owner.

REFERENCE NO. SM-6310023-00

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CAUTION
MICROWAVE RADIATION
PERSONNEL SHOULD NOT BE EXPLOSED TO THE MICROWAVE ENERGY WHICH MAY RADIATE FROM THE MAGNETRON OR OTHER MICROWAVE GENERATING DEVICE IF IT IS IMPROPERLY USE OR CONNECTED. ALL INPUT MICROWAVE CONNECTIONS, WAVEGUIDE, FLANGES, AND GASKETS MUST BE SECURE. NEVER OPERATE THE DEVICE WITHOUT A MICROWAVE ENERGY ABSORBING LOAD ATTACHED. NEVER LOOK INTO AN OPEN WAVEGUIDE OR ANTENNA WHILE THE DEVICE IS ENERGIZED.

1. ADJUSTMENT PROCEDURES

TO AVOID POSSIBLE EXPOSURE TO MICROWAVE ENERGY LEAKAGE, THE FOLLOWING ADJUSTMENTS OF THE INTERLOCK SWITCHES SHOULD BE MADE ONLY BY AUTHORIZED SERVICE PERSONNEL.

PRIMARY INTERLOCK SWITCH, INTERLOCK MONITOR SWITCH AND DOOR SENSING SWITCH ADJUSTMENT

(Figure 1)

(1) Loosen 2 screws securing the lever stopper.
(2) Adjust the lever stopper position so that it is pushed up and pull backward until there is about zero gap between the latch lever and the switch body on the door primary interlock switch and the at the same time there is about zero gap between latch lever and the switch body on the door sensing switch when the door latch is securely locked.
(3) Tighten the lever stopper screws securely.
(4) Make sure the interlock monitor switch closes after the primary interlock switch opens the door is opened very slowly, according to “CHECKOUT PROCEDURE FOR SWITCHES” on page 6.
(5) Make sure the interlock monitor switch opens beforethe primary interlock switch closes when the door is closed very slowly, according to CHECKOUT PROCEDURE FOR SWITCHES” on page 7.
(6) Make sure the microwave energy leakage should be no greater than 5 mW/cm^2 to allow to measurement uncertainty when measured with a detector.
(All service adjustments must be made for minimum microwave energy leakage readings.)

NOTE: If the interlock monitor circuit operates and at the same time the fuse blows with the door opened, be sure to replace the control circuit board because relay 3 and 4 on the control circuit board, the door sensing switch and the electric circuit related on the door sensing switch, which act as Secondary Interlock switch.

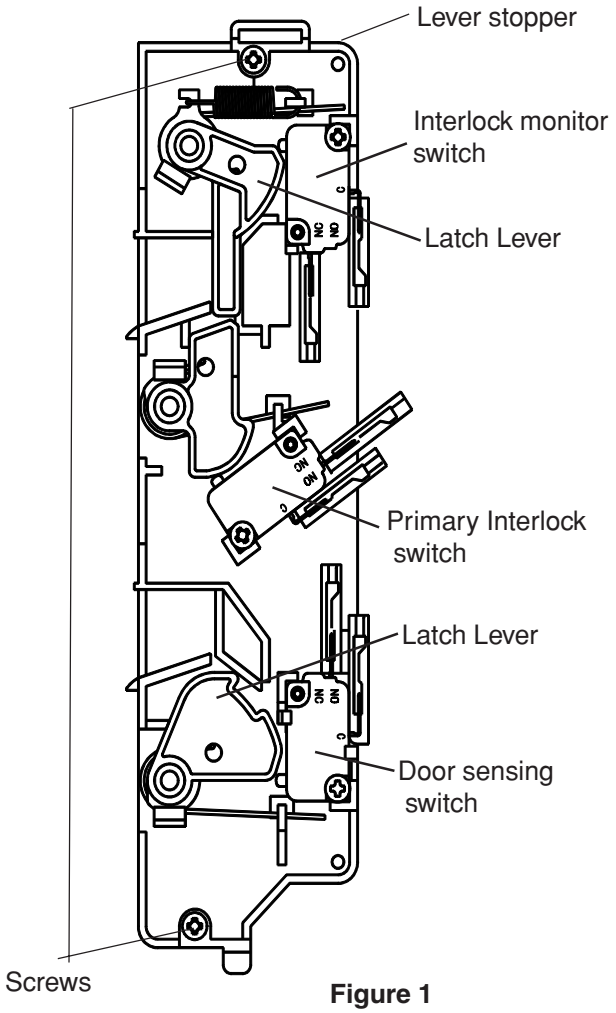


Figure 1

2.SPECIFICATIONS

Microwave output ..... 1,900W to 190W
Frequency 2,450MHz
Power supply 230V, 50Hz
Rated current ..... 12.8Amp.
Safety Device .....
Thermal limitter (Magnetron) 150 °C Open

Thermistor (Magnetron) ... 165 °C Open

Thermistor(Duct) ..... 120 °C Open
Fuse (Cartridge Type) 250V 10Ax2
Micro switch, Relay
Primary interlock Switch
Interlock monitor Switch
Door sensing Switch and
Relay RL-3 and 4
Max. input time ..... Electronic Digital, up to
Manual 10min.(max)
30min.(low power)
Overall Dimensions ..... 422(W)x540(D)x335(H) mm
Oven cavity size ..... 330(W)x330(D)x230(H) mm
Effective Capacity of Oven Cavity ..... 19.1 liters
Net weight 32Kg

3. POWER OUTPUT MEASUREMENT

(1) Prepare 1000+5g tap water.
(2) Adjust water temperature to 10±2 °C .
(3) Pour water into a container made of borosilicate Glass, 190mm outer diameter cylinder, maximum 3mm thickness.
Note :Use the container kept on the room temperature.
(4) place the container on the center of oven cavity.
(5) Set the heating time for 26 seconds and rating full power and then start oven.
(6) Take the container out immediately when heating time is up.
(7) Stir water for making even water temperature in the container.
(8) Measure water temperature.

Water temperature rise shall be 8 to 12 °C.

4. PRECATIONS AND REPAIR SERVICE TIPS

PRELIMINARY

A. SINCE NEALY 4,000 VOLTS EXISTS IN SOME CIRCUITS OF THIS MICROWAVE OVEN, REPAIRS SHOULD BE CARRIED OUT WITH GREAT CARE.

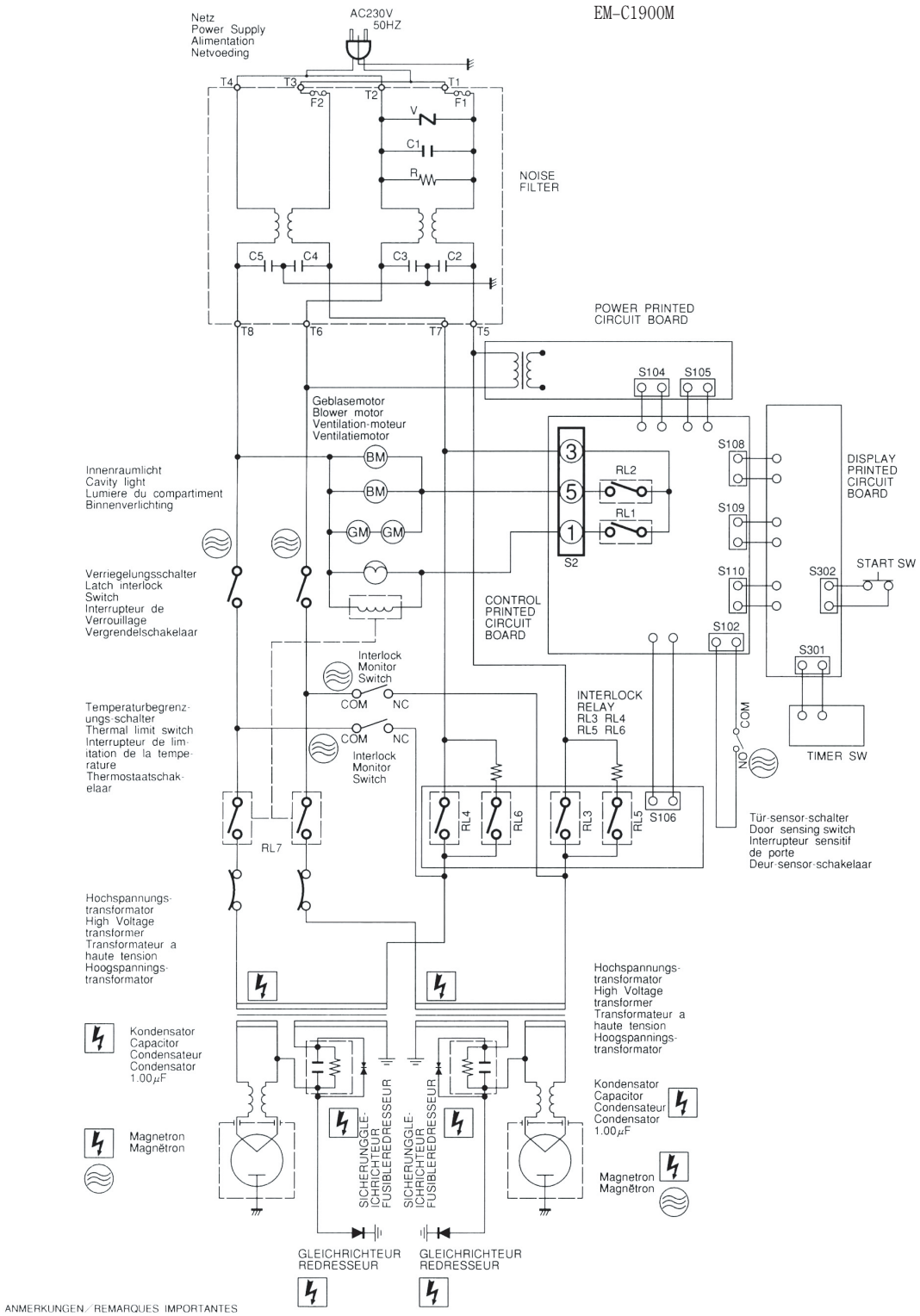
B. TO AVOID POSSIBLE EXPOSURE TO MICROWAVE ENERGY LEAKAGE, THE FOLLOWING PRECATIONS MUST BE TAKEN BEFORE SERVICING.

(1) Before the power is applied.
(a) Open and close door several times to make sure sure the door interlock switch and interlock monitor monitor switch operation properly.
(Listen for the clicking sound from switches.)
make sure the interlock monitor switch is closed after the latch interlock switch is open when the door is opened. (See pages 1 and 8)
(b) Make sure the perforated screen and the choke dielectric of the door are correctly mounted.
(2) After the power is applied.
(a) Open and close the door to see if the interlock mechanism operates properly.
(b) Check microwave energy leakage with a leakage detector and confirm the energy leakage is below 5mW/c ㎡ .
(3) Do not operate the unit until it is completely repaired if any of the following conditions exists.
(a) Door is not closed firmly against the cavity front.
(b) The hinge is broken.
(c) The choke dielectric or the door seal is damaged.
(d) The door is bent or warped, or there is any other visible damage to the oven that may cause microwave energy leakage.
Note: Always keep the seal clean.
(e) Make sure that there are no defective parts in the interlock mechanism.
(f) Make sure that there are no defective parts in the microwave generating and transmission assembly.
(especially wave guide)
(4) Following items should be checked after the unit is repaired.
(a) The interlock monitor switch is connected correctly and firmly.
(b) The magnetron gasket on the magnetron is properly positioned.
(c) Waveguide and oven cavity are intact. (No leakage of microwave energy).
(d) The door can be properly closed and the safety switches work properly.
(e) The oven must be stopped when the door is opened or the time is up.

The oven must not be operated with any of the above components removed or bypassed.

HINT FOR LAMP-CHANGE
Before removing the cabinet, pull out the main-plug. If you want to check the new lamp with the open Cabinet, take care of the following safety-cautions: Do not touch live parts. The lamp holder is not connected to the earth protection lead by a metric screws.

5.CIRCUIT DIAGRAM



ANMERKUNGEN / REMARQUES IMPORTANTES

DAS ZEICHEN / LE SIGNE — TEILE, DIE MIT DIESEM ZEICHEN VERSEHEN SIND, FUEHREN HOCHSPANNUNG UEBER 250V.
LES PIECES MARQUEES DE CE SIGNE SONT SOUS HAUTE TENSION (SUPERIEURES A 250 V)

DAS ZEICHEN / LE SIGNE — TEILE, DIE MIT DIESEM ZEICHEN VERSEHEN SIND, HABEN SPEZIELLE EIGENSCHAFTEN. DIE FUER DIE LECKSTRAHLUNG BEI MIKROWELLEN WICHTIG SIND. SOLLTE EINES DIESER TEILE AUSGEWECHSELT WERDEN, BITTE NUR VOM HERSTELLER ANGEGEBEN ERSATZTEILE VERWENDEN

LES PIECES MARQUEES DE CE SIGNE ONT DES SPECIFICATIONS IMPORTANTE POUR L'IMPERMEABILITE AUX MICRO-ONDES.
EN CAS DE CHANGEMENT, DE L'UNE DE CES PIECES N'UTILISER QUE DES PIECES, NE DU FABRICANT.

SWITCH MADE ●	LATCH INTERLOCK SWITCH	INTERLOCK MONITOR SWITCH		SECONDARY INTERLOCK: DOOR SENSING SWITCH	SECONDARY INTERLOCK: RELAY 3 RELAY 4
CONDITION	COM / NO	COM / NC	COM / NC	COM / NO	COM / NO
DOOR OPEN		●	●		
DOOR CLOSE	●			●	●

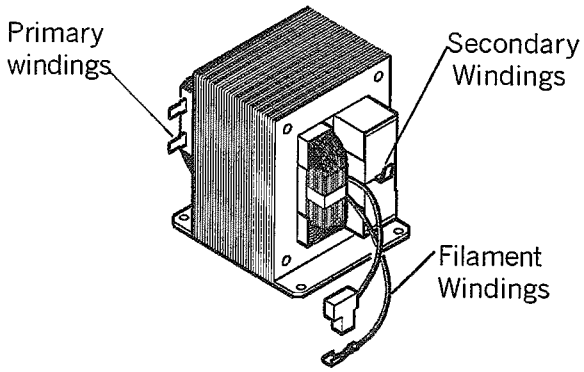
*Caution :The voltage between filament leads of magnetron is about 3.3VA.C, but the filament carries 4KV D.C high voltage with respect to grand. Never touch these lead with bare hand during operation.

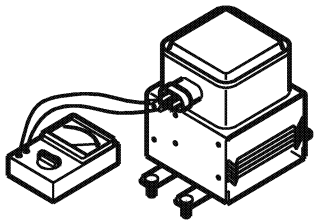
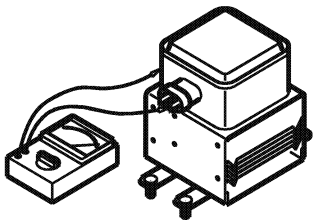
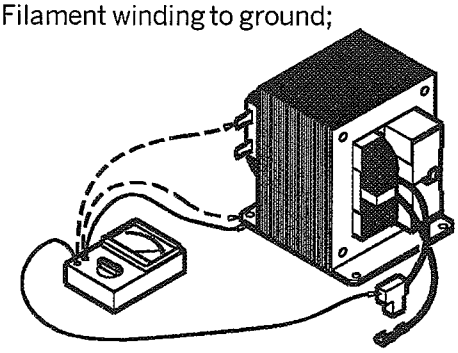
6. TEST PROCEDURES AND TROUBLESHOOTING

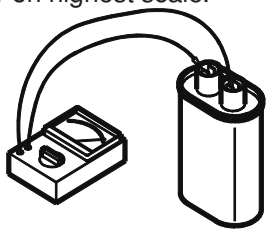
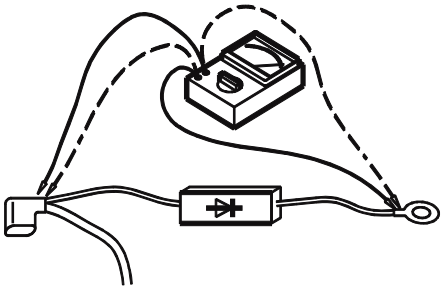
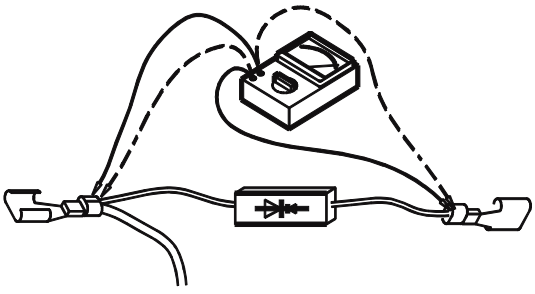
CAUTION

-DISCONNECT THE POWER SUPPLY CORD FROM THE WAL OUTLET WHENEVER REMOVING THE CABINET FROM THE UNIT.
PROCEED WITH TESTS ONLY AFTER DISCHARGING THEHIGH VOLTAGE CAPACITOR AND REMOVING THE LEAD WIRES ON THE PRIMARY WINDING OF THE HIGH VOLTAGE TRANSFOREMER. (SEE FIGURE 3)

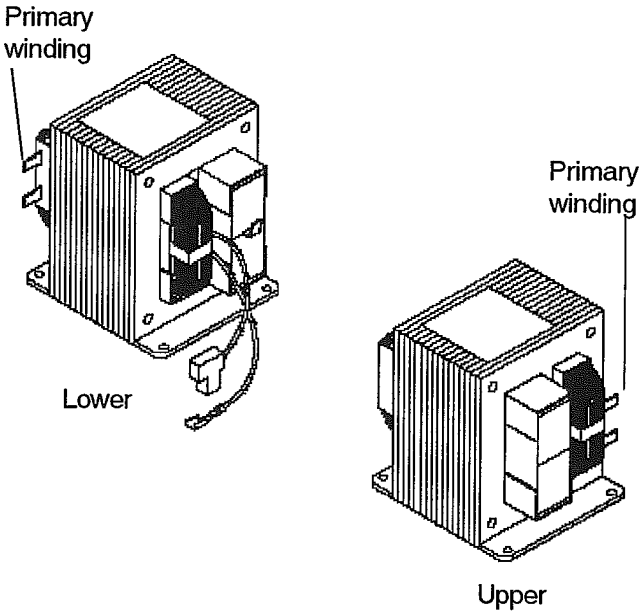
A. TEST PROCEDURES



COMPONENT	CHECKOUT PROCEDURE	RESULT
MAGNETRON	1) Check for resistance: Across the filament terminal of the magnetron with an ohm - meter on Rx1 scale. 	Normal reading: Less than 1 ohm.
	2) Check for resistance: Between each filament terminal of the magnetron and the chassis ground with an ohm-meter on highest scale. 	Normal reading: Infinite ohms.
HIGH-VOLTAGE TRANSFORMER	1) Measure the resistance: With an ohm-meter on R x1 scale. a. Primary winding; b. Filament winding; c. Secondary winding; 2) Measure the resistance: with an ohm-meter on highest scale. a. Primary winding to ground; b. Filament winding to ground; 	Normal reading: Approximately 1.0 ohms Less than 1 ohm. Approximately 60 ohms Normal reading: Infinite ohms. Infinite ohms. Note: Remove varnish of measured point.

COMPONENT	CHECKOUT PROCEDURE	RESULT
HIGH-VOLTAGE CAPACITOR Including bleeder resistor	Measure the resistance: Across two terminals with an ohm-meter on highest scale. 	Normal reading: Momentarily indicates several ohms, and gradually to 10 meg-ohms. Abnormal reading: Indicates continuity or 10 meg-ohms from the beginning.
HIGH-VOLTAGE DIODE	Measure the resistance: Across two terminals with an ohm-meter on highest scale. 	Normal reading: Indicate about the middle position in one direct (forward) and infinite ohms in the reverse direction, using meter with a 9-volt battery. NOTE - Some digital meter may show over even in a forward direction because low measuring voltage of meter does not allow the meter to pass through the high voltage diode. Abnormal reading: Indicates continuity or infinite ohms in both directions.
FUSE DIODE	Measure the resistance: Across two terminals with an ohm-meter on highest scale. 	Normal reading: Indicate infinite ohms in both directions. Abnormal reading: Indicates continuity in both directions or continuity in one direction and infinite ohms in reversed direction.

WARNING:
When removing the cabinet, you must disconnect the power supply cord from the wall outlet for your safety. Only the checkout procedure below needs the power supply on. TAKE GREAT CARE to avoid possible shock.
For your safety, proceed with the test only after removing the wire leads from the primary winding of the high voltage transformer.



COMPONENT	CHECKOUT PROCEDURE	RESULT
POWER P.C.B	Check each voltage at connector S104 and S105 after removing each connector (female) from power circuit board. Pin No.3 (Ground) and 4,5, 1,2 at S105. Pin No.1 and 2 at S104. CAUTION: Proceed with the test only after removing the wire leads from the primary winding of high voltage transformer for your safety. Test procedures: a) Make sure that the power supply cord is not plugged in. b) Remove the connector S104 and S105 from the power circuit board. c) Plug the power supply cord. d) And then, measure each voltage.	Normal reading: Connection Pin No., Voltage(V) S105 #3 to #4 DC 12 #3 to #5 DC 16 #3 to #1 DC 30 #3 to #2 DC 35 S104 #1 to #2 AC 2.4
CONTROL P.C.B	Measure the voltage: Between test points TP-1, TP-2 ,TP-3 and ground (See figure 14 on page 23) Note - Proceed with the check of the control P.C.B to see if any one of the measured values is different from the specified values.	Test point TP, Voltage(V) TP-1 DC - 5 TP-2 DC - 12 TP-3 DC - 16 TP-4 DC - 35

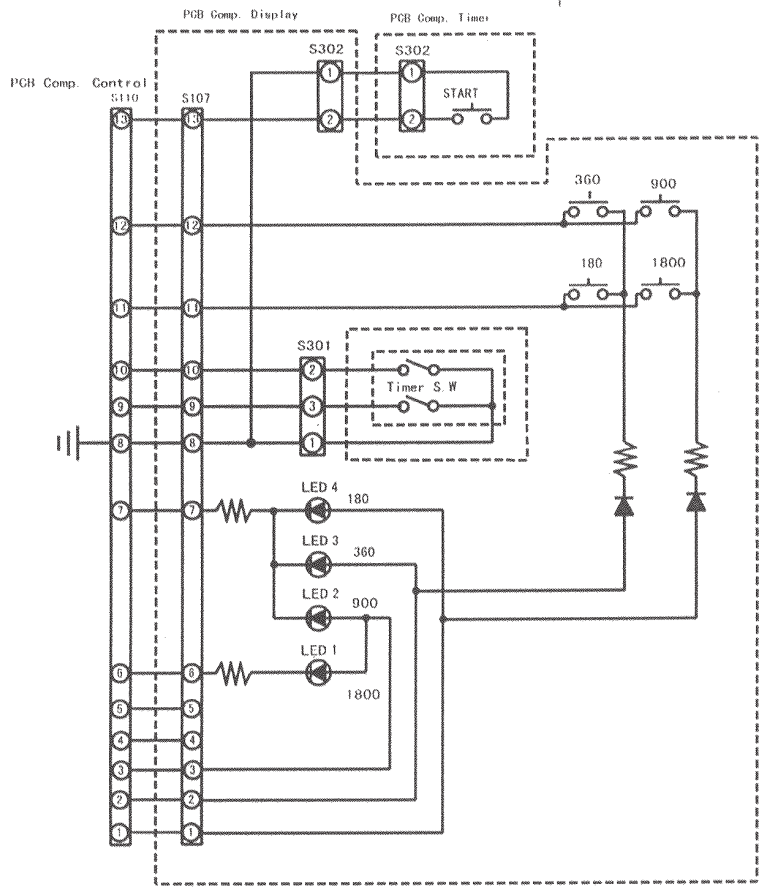
<table>
<tr><th>COMPONENT</th><th>CHECKOUT PROCEDURE</th><th>RESULT</th></tr>
<tr>
<td>TOUCH KEY BOARD</td>
<td>Measure the resistance between terminals of connector after removing it from S110. (Figure 10)
NOTE
- When reconnecting the connector, make sure the connector are properly inserted to the connector S110.
MATRIX CIRCUIT FOR SWITCHBOARD
 

FIGURE 10</td>
<td>
<table>
<tr><td rowspan="2">Resistance Value</td><td>When touched</td><td>When not touched</td></tr>
<tr><td>Less than 5 K ohms</td><td>More than 1 meg ohms</td></tr>
</table>
When checking 900 W key , connect ohm-meter to the terminal 12 to 1.
</td>
</tr>
</table>

CHECKOUT PROCEDURE FOR SWITCHES

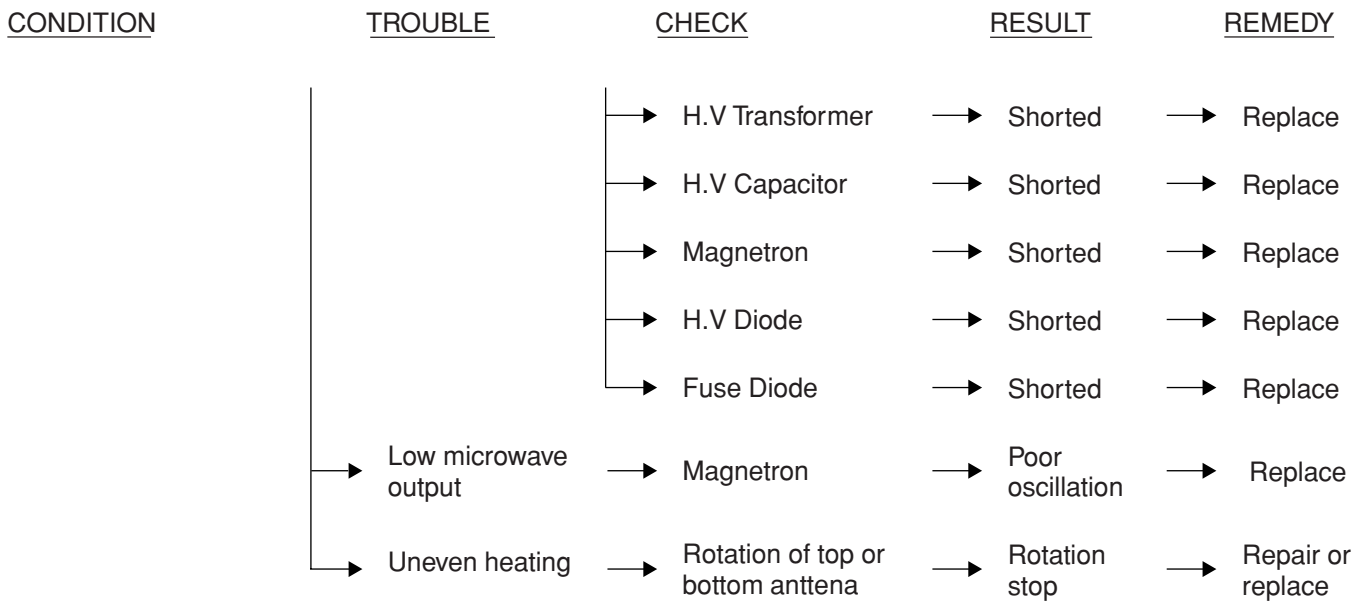
Disconnect the lead wires from the switches and check for the continuity of the switches, connecting an ohm-meter to its terminals.

SWITCHES (SEE Figure 1 on page 1)	CHECKOUT PROCEDURES	DOOR OPEN	DOOR CLOSE
PRIMARY INTERLOCK DOOR SENSING	Terminals "COM" and "NO"		
INTERLOCK MONITOR	Terminals "COM" and "NC"		

CAUTION: After checking the switches, make sure that the interlock monitor switch is properly connected according to the CIRCUIT DIAGRAM on page 3.

B. TROUBLESHOOTING

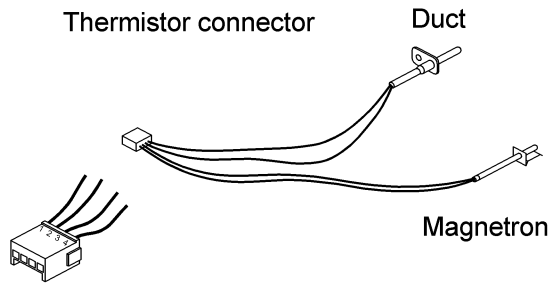
CONDITION	TROUBLE	CHECK	RESULT	REMEDY
Power is applied with normal voltage		Connection of S110 to S107	Poor Contact	Reconnect
Timer is set Touch Select key	No display cooking time	Power circuit board (See page 6)	Voltage incorrect	Replace
		Control circuit board (See page 6)	Voltage incorrect	Replace
	Cooking operation will not start	Primary Interlock switch (See page 7)	No continuity	Replace
		Thermal protector	No continuity	Replace
		Door sensing switch (See page 7)	No continuity	Replace
		Control circuit board (See page 6)	Voltage incorrect	Replace
	Oven dose not heat up	Control circuit board (See page 6)	Voltage incorrect	Replace
		H.V Transformer (See page 4)	Resistance incorrect	Replace
		H.V Capacitor (See page 5)	Resistance incorrect	Replace
		Magnetron (See page 4)	Resistance incorrect	Replace
		Monitor switch (See page 7)	Contact on No continuity	Replace or Adjust
	Fuse(10A) blows off immediately	Blower motor	Shorted	Replace
		Step-down Transformer	Shorted	Replace



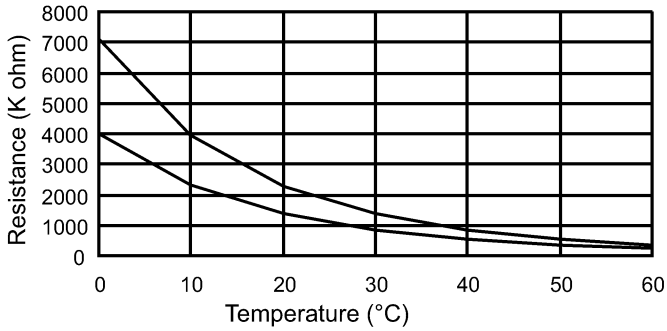
C. ERROR INDICATION

This model has some self diagnosis functions.
Display shows "E" depending on the trouble.

DISPLAY	Trouble	Situation
E-21	Thermistor for duct of cavity top is operated by over heating of 120 °C	Buzzer will continuously beep tone. Blower motor will stop immediately. Then oven will stop heating.
E-31	Thermistor for lower magnetron or duct is shorted.	Blower motor will stop immediately. Then oven will stop heating.
E-32	Thermistor for lower magnetron or duct is disconnected or removed from connector socket.	Oven will stop heating. Blower motor will be operated.
U-10	Thermistor for Magnetron is operated by over heating of 165 °C	Buzzer will continuously beep tone. Blower motor will stop immediately. Then oven will stop heating.
U-50	The purpose of this function is to prevent operation when there is no food in the oven	Open and close the door, and then touch the key before 1 minute passes



Thermistor Chart



"HINT"

PROCEDURE FOR DETERMING WHETHER THE UPPER MAGNETRON CIRCUIT OR LOWER MAGNETRON CIRCUIT IS DEFECTIVE.

SYMPTOM:One magnetron does not work giving less than normal heat.

Caution: Make sure that cabinet (outer wrap) and rear plate are not removed from the oven for your safety.

1.Operate oven as follows.
1)Place a cup of water in the oven
2)Close the door.
3)Touch "Power selection key(1900W)" and set 50 seconds by turning TIMER KNOB, then touch "START" key to operate the oven for 50 seconds with full power level.

2. Determine if the Exhaust air is warm in the following positions..
1)Put your hand near the exhaust duct outside of the rear plate to feel the exhaust (Never remove the cabinet and rear plate from the oven for your safety when you put your hand near exhausting duct.)
2)If air from the upper position of the duct is not warm,the upper magnetron circuit is defective.
If air from the lower position of the duct is not warm,the lower magnetron circuit is defective.

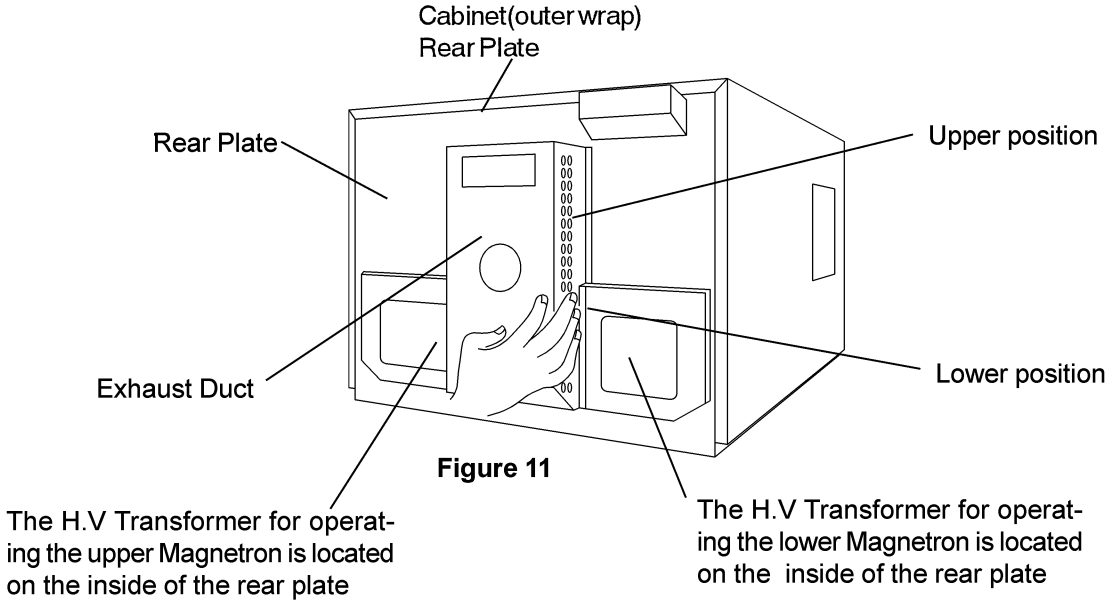

Cabinet(outer wrap)
Rear Plate
Rear Plate
Upper position
Exhaust Duct
Lower position
The H.V Transformer for operating the upper Magnetron is located on the inside of the rear plate
The H.V Transformer for operating the lower Magnetron is located on the inside of the rear plate

Figure 11

7. DISASSEMBLY INSTRUCTIONS

- OVEN MUST BE DISCONNECTED FROM ELECTRITRICAL OUTLET WHEN MAKING REPLACEMENTS, REPAIRS, ADJUSTMENT AND CONTINUITY CHECKS BEFORE PROCEEDING WITH ANY REPAIR WORK AFTER DISCONNECTING, WAIT AT LEAST1MINUTE, UNTIL THE CAPACITOR IN THE HIGHVOLTAGE AREA HAS FULLY DISCHARGED.

A. REMOVING PRIMARY INTERLOCK SWITCH

(See Figure 1 on page 1)

(1) Disconnect all lead wires from the primary interlock switch.
(2) Remove 2 screws securing the lever stopper.
(3) Remove 1 screw securing the switches. Then pullout the switches.
(4) Make necessary adjustment, and make microwave energy leakage check according to "1. ADJUSTMENT PROCEDURE FOR SWITCHES" an page 1, after it is replaced with new one, and check proper operation of it according to "CHECKOUT PROCEDURE FOR SWITCHES" on page 7.

B.REMOVING INTERLOCK MONITOR AND DOOR SENSING SWITCH

(See Figure on page 1)

(1) Disconnect all lead wires from the interlock monitor switch and door sensing switch.
(2) Remove 1 screw securing the these switches. Then pull out the switches.
(3) Make necessary adjustments or replacement of switch by the reversing step (2) and check micro wave energy leakage according to "1. ADJUSTMENT PROCEDURE FOR SWITCHES" on page1, after it is replaced with new one, and check proper operation of it according to "CHECKOUT PROCEDURE FOR SWITCHES" on page 7.

WHEN REPLACING ANY DOOR MICROSWITCH, REPLACE WITH THE SAME TYPE SWITCH SPECIFIED ON THE PARTS LIST.

C. REMOVING FUSE

Remove the 10A fuse with screwdriver.

NOTES

- When replacing the 10A fuse, be sure to use an exact repair part.
- If the 10A fuse blows immediately, check the primary interlock switch, the relay 3 and 4 (on the control circuit board) and the interlock monitor switch according to "CHECKOUT PROCEDURE FOR SWITCHES" on page 8. and make sure to check the microwave energy leakage according to "1. ADJUSTMENT PROCEDURE FOR SWITCHES" on page 1, when the primary interlock switch, the relay 3 and 4 or the interlock monitor switch is adjusted or replaced.
- If the primary interlock switch, the relay 3 and 4 or the the interlock monitor switch operate properly, determine which of the followings is defective : control circuit board,blower motor, gear motor, high voltage transformer, high voltage capacitor, high voltage diode or magnetron.
- If the high voltage diode is defective replace not only the high voltage diode but also the fuse diode.

D. REMOVING DISPLAY CIRCUIT BOARD

(1) Disconnect all lead wires of the Control panel from the Control PCB and Power PCB.
(2) Remove 4 screws securing the Control panel Ass'y to the oven cavity.
(3) Push up and pull out the Control panel Ass'y.
(4) Remove 4 screws securing the Display PCB.
(5) Take out the Display PCB and push up the lever end of the plastic fastener and remove the FPC connector from the connector socket S101.

CAUTION:
When replacing new Display PCB please take big care that all 4 LED heads shoul dexacty be inserted into the square holes of control frame all at once. Never force to push any LED lead in the PCB.

E. REMOVING MAGNETRONS

(1) Remove 2 screws securing the thermal limitter .
(2) Disconnect 2 lead wires from the magnetron terminals by removing 2 connectors.
(3) Remove thermistor (lower magnetron) by pulling horizontally.
(4) Remove 4 hex nuts (upper magnetron) or 2 hex nuts (lower magnetron)securing to the waveguide.
(5) Remove lower magnetron.
(6) Take out the magnetron VERY CAREFULLY.

NOTES

- When removing the magnetron, make sure that its dome does not hit any adjacent parts, or it may be damaged.
- When replacing the magnetron, be sure to install the magnetron gasket in the correct position and be sure that the gasket is in good condition.
- After replacing the magnetron, check for microwave make sure the microwave energy leakage is below the limit of the regulation ($5mW/cm^2$).

F. CHANGING POWERSUPPLY CORD

(See exploded view on page 15)

(1) Unfasten 1 screw for earth and pull out 2 wires of power cord from terminal plate.

(2) Remove1 screw for bottom bracket of cord bushing.

(3) install the new power supply cord with reverse procedure of above (1) to (2).

WARNING:

For the changing the power supply cord, never use other than following.

Key No.	Order No.	Parts Name
5	617 196 9184	Power cord Ass'y(UK)
6	617 078 3132	Cord bush (UK)
20	617 125 3832	Bottom bracket (UK)

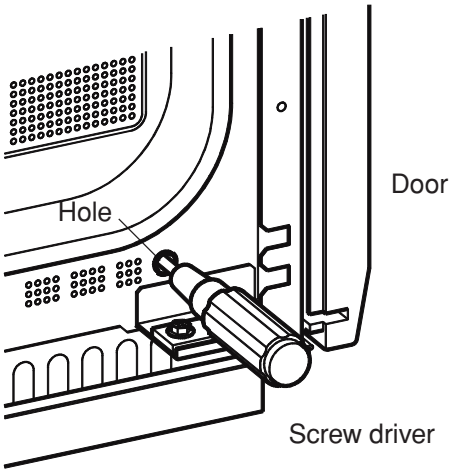
G. REMOVING CERAMIC TRAY ASS'Y

(See Fig.11)

(1) Take off the cabinet.

(2) Put (insert) a screwdriver in the 9 mm diameter hole locating at lower hinge of left side of the oven cavity. And push the tray up with the screwdriver.

(3) Open the door and take out the tray very carefully.



H.REMOVING DOOR

Figure 11

Remove 2 hex nuts securing the upper hinge, remove 3 hex nuts securing the lower hinge and remove1 special screwsecuring the door arm (located at the bottom of the door sash).

NOTES

- After replacing the door, be sure to check that the primary interlock switch, the door sensing switch and the interlock monitor swich operate normally. (See pages 1 and 7)
- After replacing the door, check for microwave energy leakage with a leakage detector. Microwave energy leakage must be below the limit of 5mW/c ㎡.

I.HOW TO RESET THE MEMORY OF ACCUMULATIVE COOKING TIME

1. Push the keys step by step as follows,
   Turn the Timer Knob to left until display shows"0".
   Touch START key first and also touch POWER SELLECTION key (1800W) until display changes.
   The display will show accumulative cooking time in the display window.

2. Then push the POWER SELLECTION key(1800W) during cooking time appear in the display.

3. Push the POWER SELLECTION key(1800W) for 4 seconds continuously.
   Accumulative cooking time will be cleared.

J.CAUTION FOR CUSTOMER ON OPENING AND CLOSING DOOR

When the Microwave oven is in operation, should the customer open the door slightly and close, the breaker of the house will occasionally be cut off.
It is necessary to explain to the customer not to exercise such matter.
When the Door is opened slightly between 2 or 3 mm distance, primary interlock switch turn OFF, and operation stops.
However door sensing switch will remain ON, and if door is closed, primary interlock switch activates and operation resumes immediately.
At such time microwave oven will start any time.
Therefore a big In-rush currnet flows, and thus Breaker will be cut off.

K.RELEASING TYPE CONNECTOR

This oven is provied with locked type connector.
When you remove a connector, pull the connector while releasing the lock by pressing ìAî point shown below.
Do not pull the wire of the connector.
Connector:S1, S2, S102, S104, S105 (Figure 13)

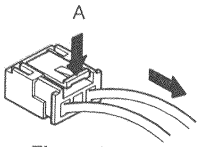


Figure 13

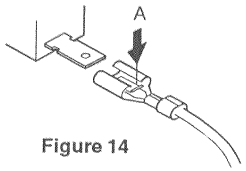


Figure 14

Pull connector case (Never pull the wire)

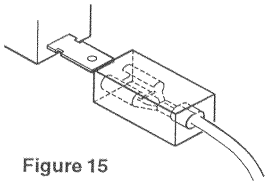
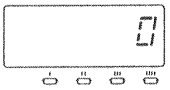
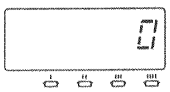


Figure 15

CHECKING ACCUMULATIVE COOKING TIME, NUMBER OF DOOR OPERATIONS AND CONTROL OF THE BUZZER SOUND

The number of door operations. (100 times)

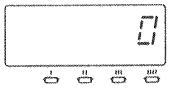
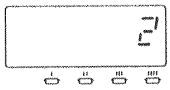
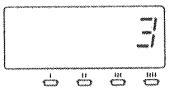
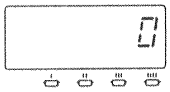
Accumulative cooking time.

	Operation		Display window	
1		• Turn the TIMER KNOB to left until display shows "0".		
2		• Touch START key first and also touch POWER SELECTION key until display changes.		• The total cooking time appears in the display for 5 seconds. • "0" appears in the display.

The volume of the buzzer.

when cooking is interrupted by door opening

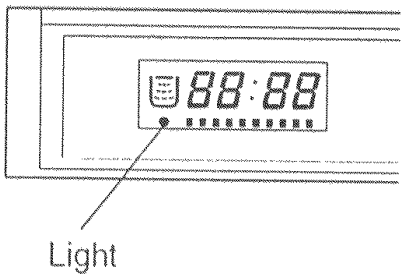
0 · · · Indication of remaining cooking time
1 · · · To cancel remaining cooking time

	Operation		Display window	
1		• Turn the TIMER KNOB to left until display shows "0".		
2		• Touch START key first and also touch POWER SELECTION key 30 W until display changes.		**● The display incicates number of current setting.** **0 · · · none** **1 · · · quiet** **2 · · · medium** **3 · · · loud**
3		• Turn the TIMER KNOB to change setting. • When you don't change setting, skip steps 3.		
4		• Touch START key.		• "0" appears in the display. • Volume of buzzer is set.

Maintenaunce:

The microwave ovens are designed, manufactured, and tested for years of dependable operation. Howevre, the oven may require service from time to time if the consumable components listed below are not replaced at the appropriate time. For protection from unexpected service calls and undue inconvenience, we recommend that the user has the listed parts replaced at the intervals belows,(at customer cost).
This will avoid the trouble of repeated service calls after the expiration of the warranty period.

Consumable components:
When more than 1,250 hours of accumulative cooking time or more than 200,000 cycles of door opening/closing is observed by key operations (See page 13 for more information), the following consumable components shoud be replaced.
(Maintenance light in window display indicates when accumulativ cooking time reaches 1,250 hours.)



1. Magnetron Tubu, Part No. 415 003 1709

2. Printed Circuit Board-Relay, Part No. 617 202 0150

3. Switch base Assembly, Part No. 617 206 7865

4. Door Latch, part No. 617 068 1087

When more than 2,000 hours of accumulative cooking time is observed, the following consumable components should be replaced.

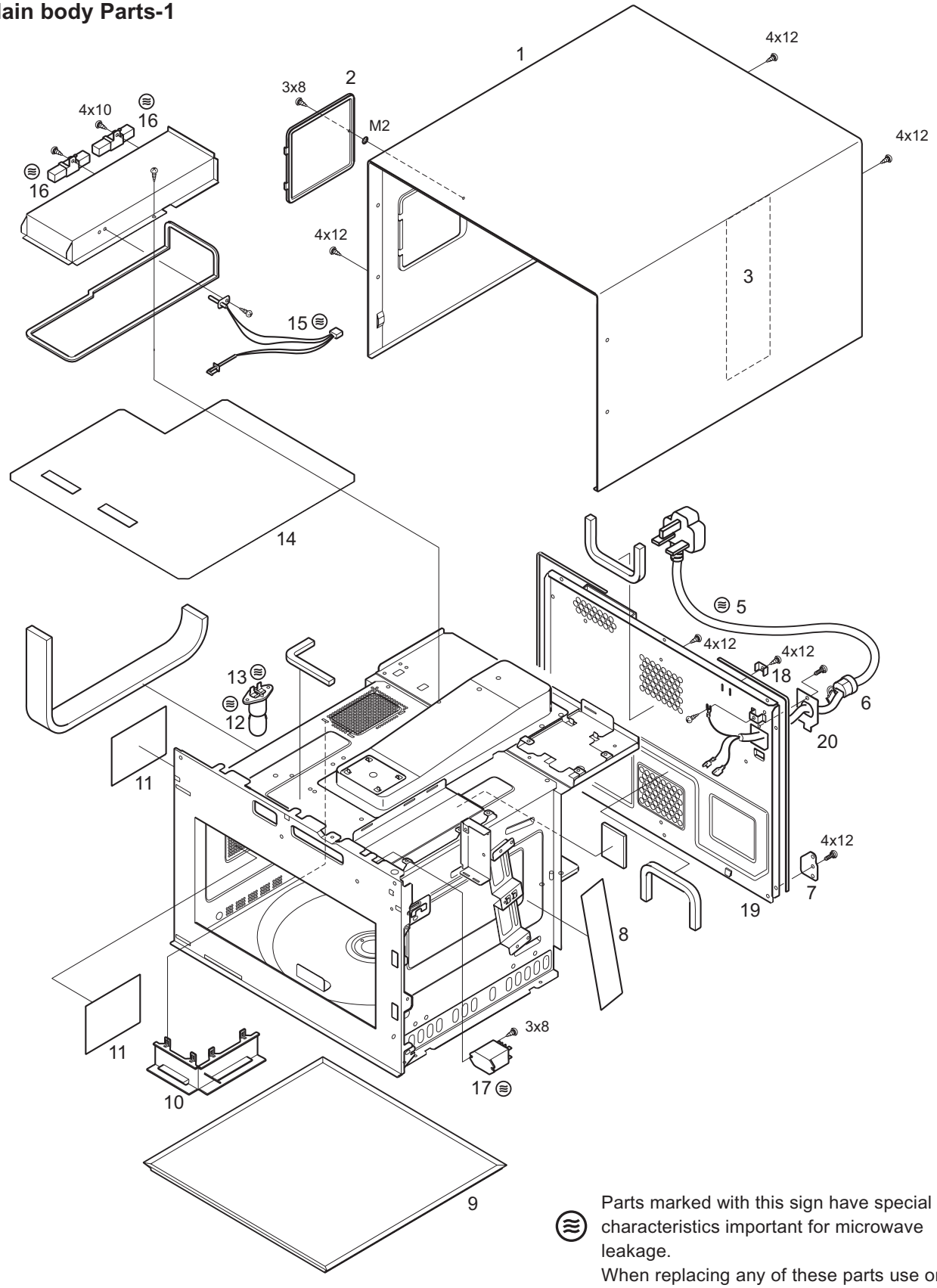
5. Blower motor, Part No. 617 196 9245
   When slow rotating of blower motor is observed after removing dust from blower motor, blower motor must be replaced.

6. Door hinge, Part No. 617 120 3028
   When a worn door hinge is observed and proper door adjustments can not be made, the door hinge must be replaced.

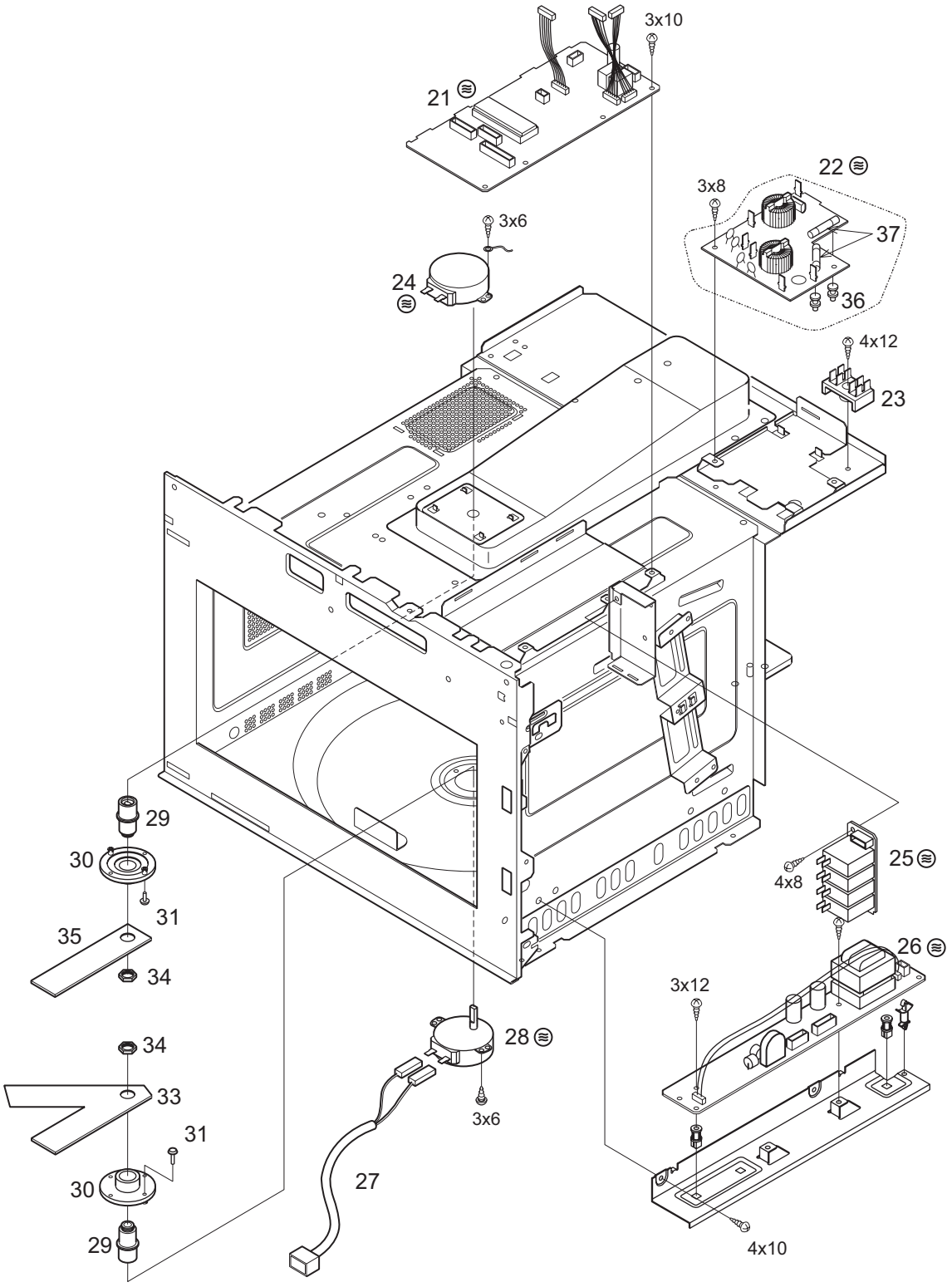
7. Door Assembly, Part No. 617 239 6354
   When a worn door pin is observed and proper door adjustments can not be made, the door assembly must be replaced.

8. EXPLODED VIEW AND PARTS LIST

Main body Parts-1



Parts marked with this sign have special characteristics important for microwave leakage.
When replacing any of these parts use only manufacturers specified parts.



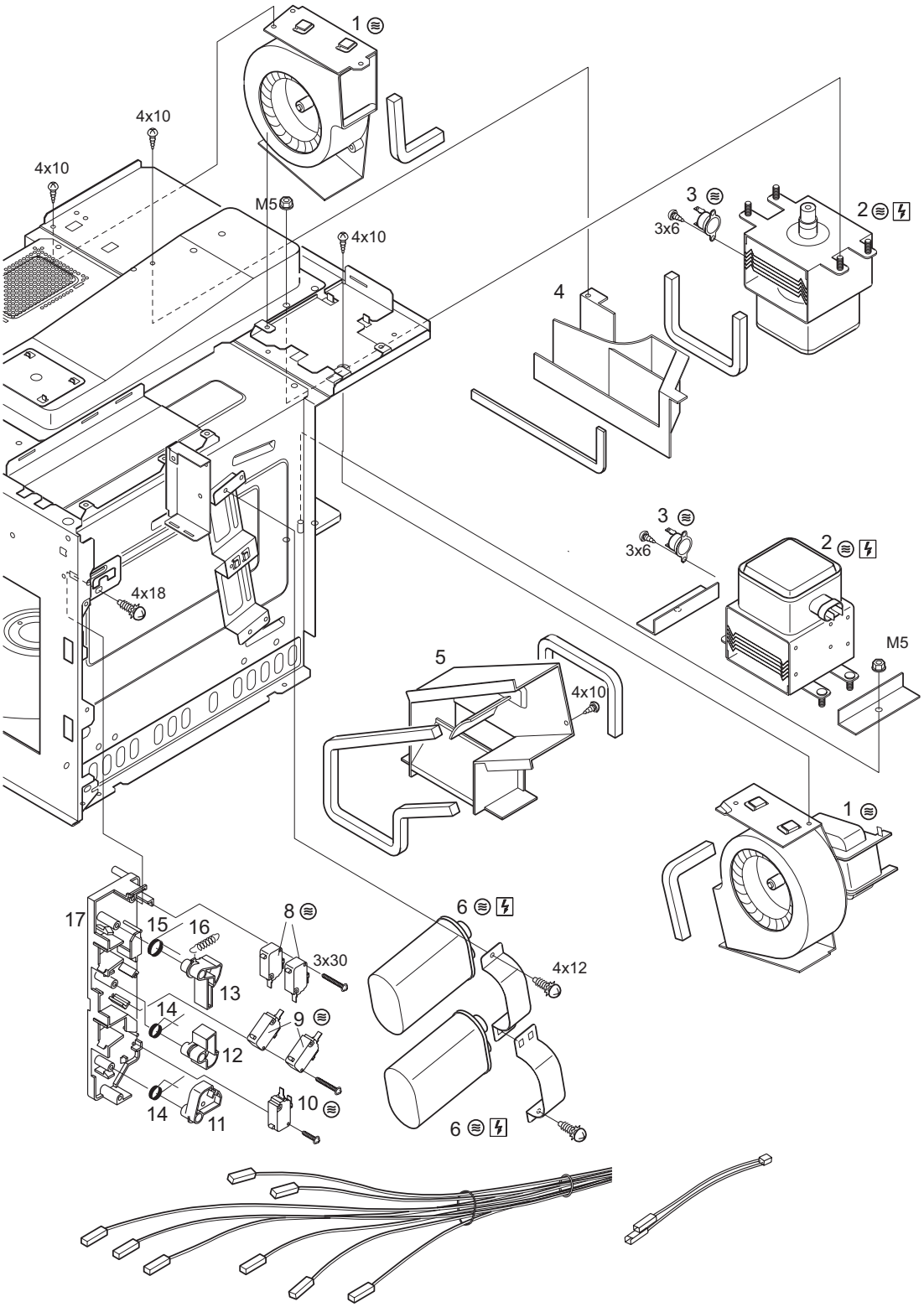
≋ Parts marked with this sign have special characteristics important for microwave leakage.
When replacing any of these parts use only manufacturers specified parts.

Main body Parts-1

EM-C1900MUK

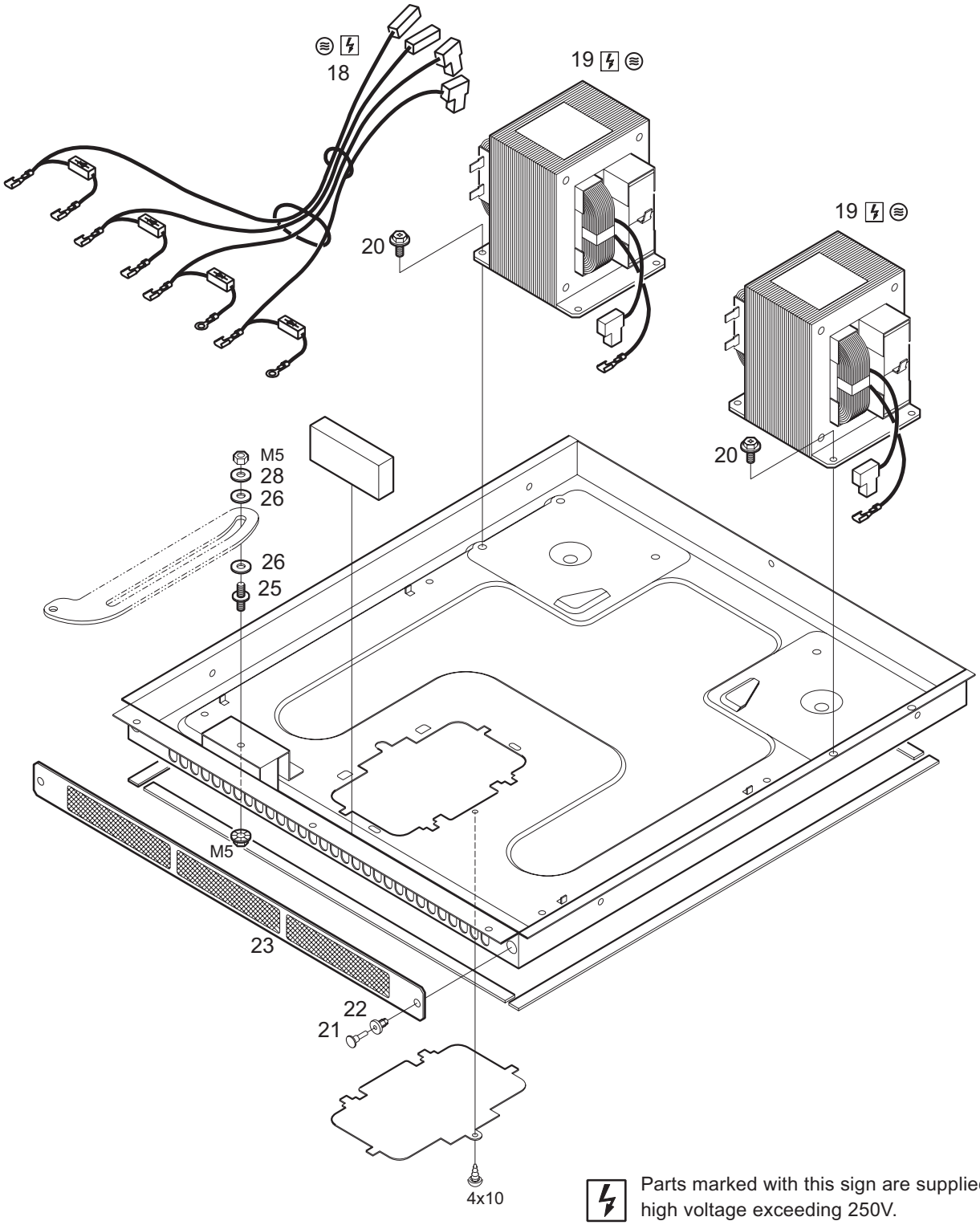
KEY No.	SERVICE PARTS	DESCRIPTION		Q'TY
1	617 120 2854	CABINET	SUS430	1
2	617 055 9584	FRAME PLATE ASS'Y		1
3	617 123 9942	INSU. SHEET	T0.4	1
5	617 196 9184	CORD COMP.	UPPER	1
6	617 078 3132	CORD BUSH	LOWER	1
7	617 179 6087	FRAME B.C.T	LGCC T1.2	1
8	617 202 7845	INSU. SHEET	T0.4	1
9	617 120 4230	SHELF ASS'Y		1
10	617 120 4148	STIRRER GUIDE	P.P	1
11	617 120 3387	LAMP OPENING COVER	POLYSTER T0.1	2
12	617 238 3026	LAMP	METRO 240V 25W E-14	1
13	617 077 6356	LAMP SOCKET	OKUNO PA0 2A250VT15	1
14	617 237 1726	CAVITY COVER	PEI GE	1
15	617 267 4193	THERMISTOR ASS'Y		1
16	402 061 1505	CERAMIC RES 25J 20W	MTST ERF-20HMJ250	2
17	617 131 3789	RELAY	LY2F-T2-T115	1
18	617 195 1295	SPECIAL WASHER	BRASS T1.0 NI PLATIN	1
19	617 214 4801	FRAME REAR PLATE ASS'Y		1
20	617 125 3832	BOTTOM BRACKET	LGD T1.2 60160	1
21	617 266 5184	P.C.B COMP.	CONTROL	1
22	617 208 1403	P.C.B COMP.	NOISE FILTER(+FUSE)	1
23	617 192 2110	TERMINAL PLATE	CB-70921	1
24	617 224 4006	GEAR MOTOR, UPPER	MT-8	1
25	617 202 0150	P.C.B COMP.	RELAY	1
26	617 214 1619	P.C.B COMP.	POWER	1
27	617 130 4879	HARNESS		1
28	617 209 9422	GEAR MOTOR, LOWER	M2CJ29AA49-H UL	1
29	617 120 3325	ANTENNA SHAFT	AL	2
30	617 212 8535	ANTENNA BEARING	PFA	2
31	617 121 9265	CLIP		4
33	617 149 3054	ANTENNA, LOWER		1
34	617 120 3349	SPECIAL NUT	AL	2
35	617 120 3332	ANTENNA, UPPER	AL	1
36	617 207 6836	CLIP	MPS-04-0, NF	2
37	423 018 7609	FUSE 250V 10A		2

Main body Parts-2



Parts marked with this sign are supplied with high voltage exceeding 250V.

Parts marked with this sign have special characteristics important for microwave leakage.
When replacing any of these parts use only manufacturers specified parts.



Parts marked with this sign are supplied with high voltage exceeding 250V.

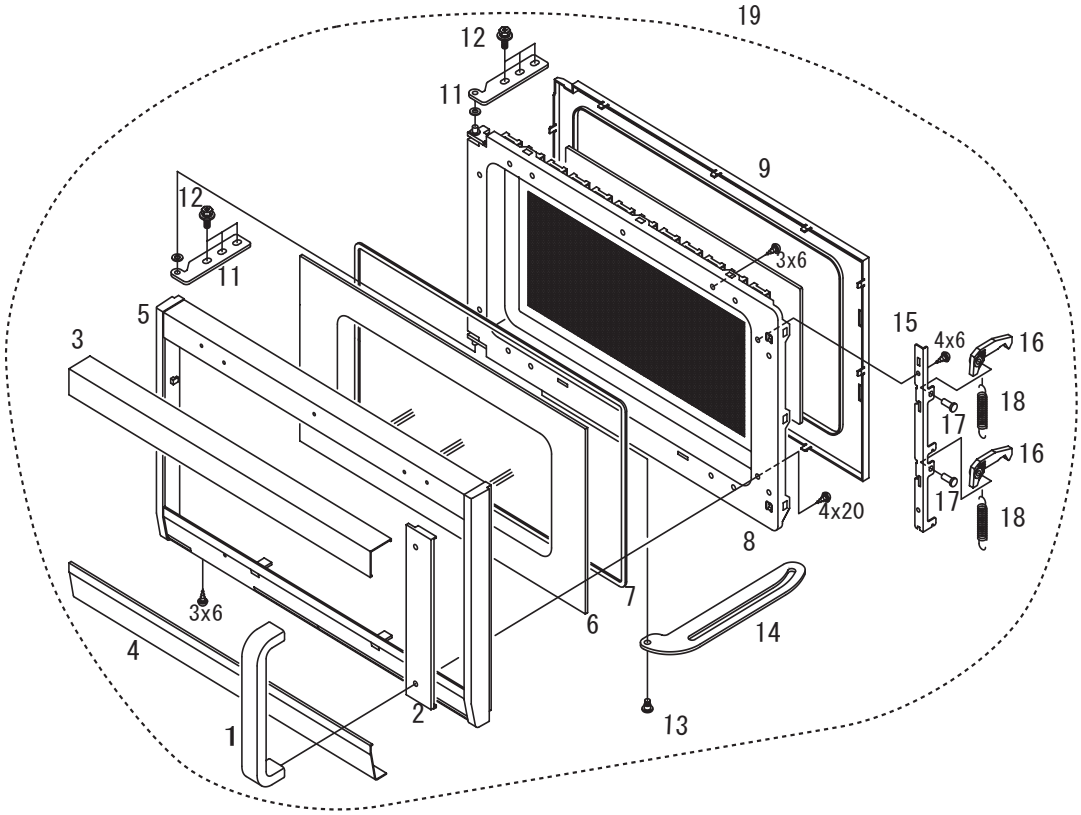
Parts marked with this sign have special characteristics important for microwave leakage.
When replacing any of these parts use only manufacturers specified parts.

Main body Parts-2

EM－C1900MUK

KEY No.	SERVICE PARTS	DESCRIPTION		Q'TY
1	617 196 9245	BLOWER COMP.		2
2	415 003 1709	MAGNETRON 2M282K(M)		2
3	617 214 7628	THERMOSTAT	NGT 03EN 150C	2
4	617 120 3431	DUCT,MAG.UPPER	UPPER	1
5	617 120 3448	DUCT,MAG.LOWER	LOWER	1
6	617 206 8220	CAPACITOR	0.1MFD	2
8	617 004 5230	MICRO SWITCH, MONITOR	V-5220D-502	2
9	617 160 0438	MICRO SWITCH, LATCH	V-5930D-013	2
10	617 004 3724	MICRO SWITCH, DR SENS.	V-5330DK	1
11	617 178 1182	LATCH LEVER		1
12	617 178 1175	LATCH LEVER		1
13	617 178 1168	LATCH LEVER		1
14	617 178 1205	SPRING	SUS304-WPB D0.65	2
15	617 178 1212	SPRING	SUS304-WPB D0.65	1
16	617 187 2217	SPRING	SUS304-WPB D0.7	1
17	617 178 1151	LEVER STOPPER	6-6NYLON G-15	1
18	617 214 6553	HARNESS WITH DIODE		1
19	617 214 4474	HV TRANSFORMER	N5T-C1850	2
20	617 080 4196	SPECIAL SCREW		6
21	617 242 5399	CLIP		2
22	617 122 6379	GROMET		2
23	617 120 3394	FILTER ASS'Y		1
25	617 080 3830	SPECIAL SCREW		1
26	617 080 5179	SPECIAL WASHER	TEFRON	2
28	617 080 5186	SPECIAL WASHER	SPG T1.0XD5XD13	1

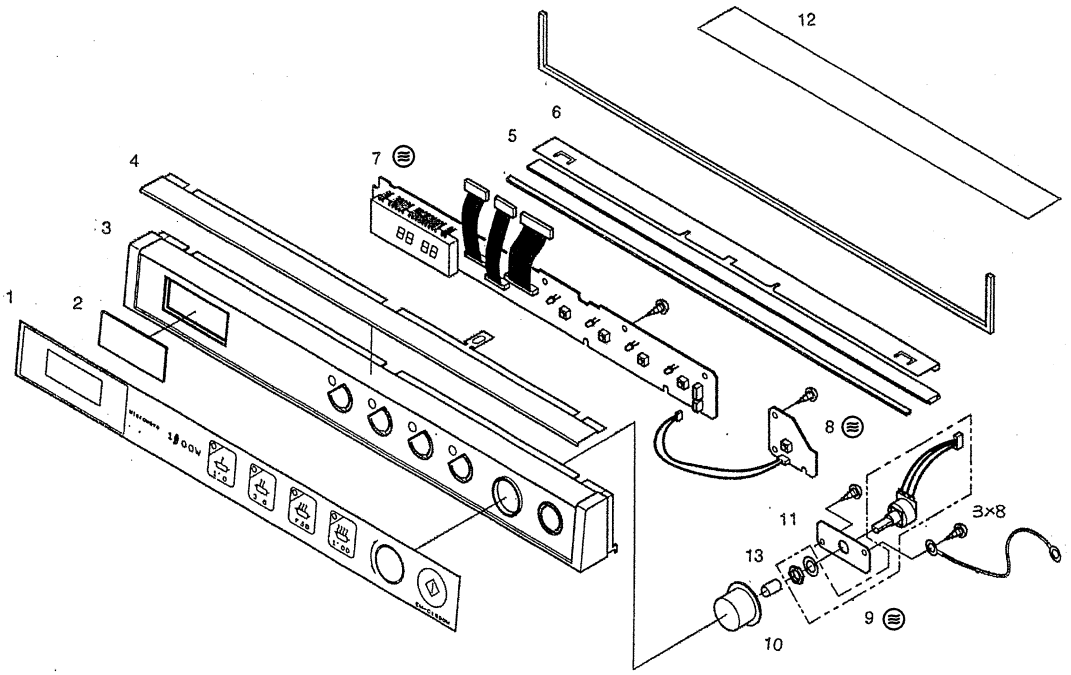
Door Parts



EM－C1900MUK

KEY No.	SERVICE PARTS	DESCRIPTION		Q'TY
1	617 201 9697	DOOR HANDLE	AL	1
2	617 201 9680	DOOR BASE	PP	1
3	617 120 3110	ORNAMENT PLATE	UPPER	1
4	617 120 3127	ORNAMENT PLATE	LOWER	1
5	617 226 5605	DOOR COVER	ABS CE10 (T90)	1
6	617 257 2970	DOOR PANEL	GLASS T3.2	1
7	617 121 5489	PACKING		2
8	617 239 6354	DOOR ASS'Y		1
9	617 178 0840	CHOKE DIELECTRIC	FR-PET	1
11	617 120 3028	HINGE	SPHC T3	2
12	617 102 7495	SPECIAL SCREW	CAP TIGHT SELLATIONS	6
13	617 080 3847	SPECIAL SCREW	SUS-304 D6	1
14	617 068 3623	DOOR ARM		1
15	617 178 0833	LATCH SUP.	SECC-J T1.0	1
16	617 068 1087	DOOR LATCH	DURACON GF25%	2
17	617 068 3579	ARM PIN	S30C ZK	2
18	617 140 5392	SPRING	SWP-B D1.1	2
19	617 257 3045	DOOR COMP.		1

Control panel Parts



Parts marked with this sign have special characteristics important for microwave leakage.
When replacing any of these parts use only manufacturers specified parts.

EM−C1900MUK

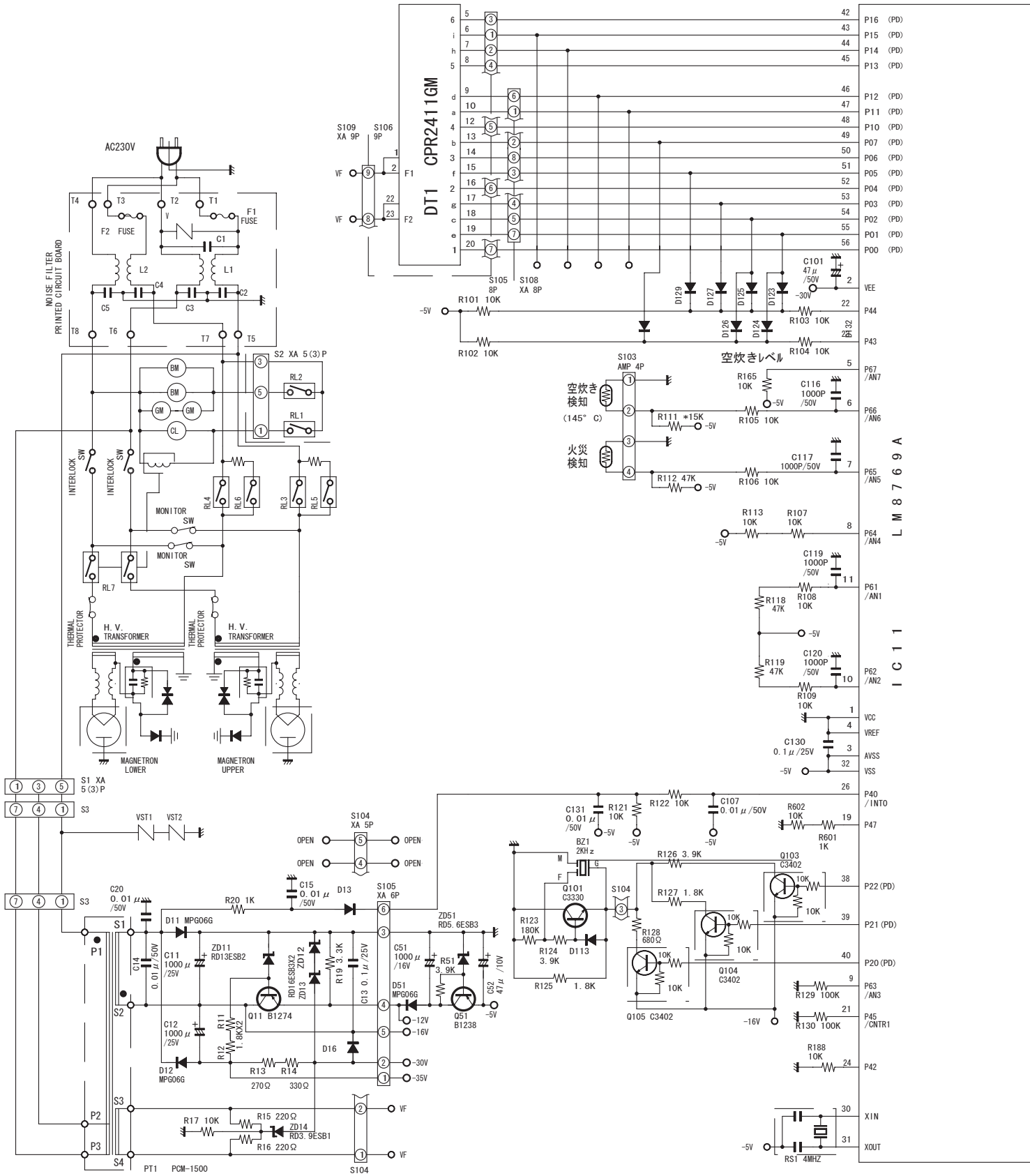
KEY No.	SERVICE PARTS	DESCRIPTION		Q'TY
1	617 226 5214	CONTROL PLATE		1
2	617 206 0873	CONTROL PLATE	ACRIL 2.0	1
3	617 193 6094	CONTROL BASE	ABS	1
4	617 130 9348	ORNAMENT PLATE		1
5	617 073 7616	CAVITY GASKET		1
6	617 073 9672	PACKING COVER	SECC T0.6	1
7	617 266 5375	P.C.B COMP.	D-BOARD	1
8	617 192 5920	P.C.B COMP.	START	1
9	617 206 9203	SWITCH ASS'Y TIMER		1
10	617 193 6315	KNOB BODY	ABS	1
11	617 213 8596	PARTS BASE	LGCC T1.0	1
12	617 208 3377	CONTROL COVER	T0.1	1
13	617 213 8619	SPACER		1

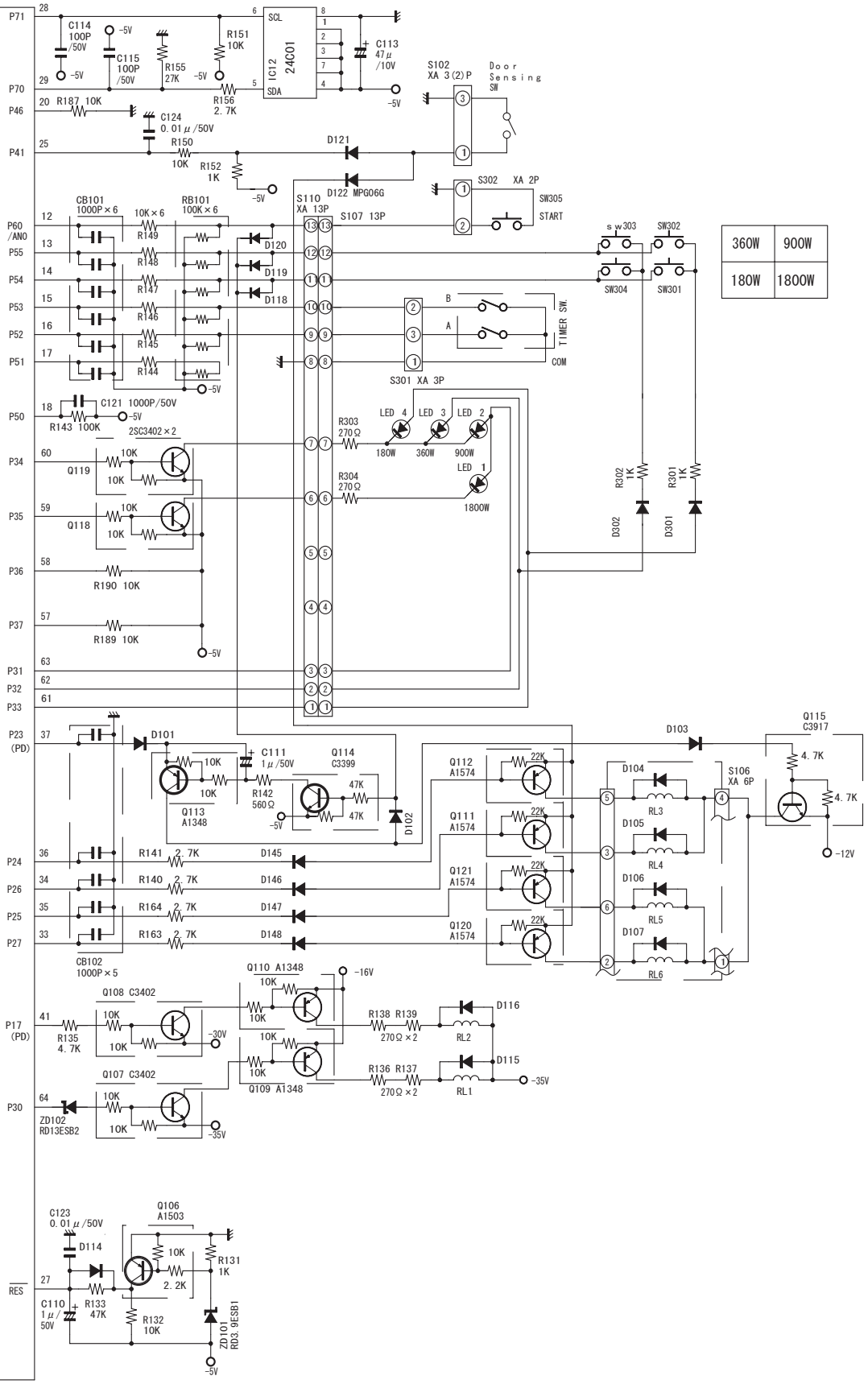
ACCESARIES

KEY No.	SERVICE PARTS	DESCRIPTION	Q'TY
1	617 197 4416	PARTS BAG COMP.	1
2	617 266 5320	INST. MANUAL	1

Accesaries Item No.1 - No.2 are not illustrated.

9. OVERALL CIRCUIT DIAGRAM




P71
P70
P46
P41
P60 /AN0
P55
P54
P53
P52
P51
P50
P34
P35
P36
P37
P31
P32
P33
P23 (PD)
P24
P26
P25
P27
P17 (PD)
P30
RES
C114 100P /50V
C115 100P /50V
R155 27K
R151 10K
R156 2.7K
IC12 24C01
SCL
SDA
C113 47μ /10V
S102 XA 3(2)P
Door Sensing SW
R187 10K
C124 0.01μ/50V
R150 10K
R152 1K
D121
D122 MPG06G
S302 XA 2P
SW305 START
CB101 1000P×6
RB101 100K×6
10K×6
R149
R148
R147
R146
R145
R144
S110 XA 13P
S107 13P
D120
D119
D118
SW303
SW302
SW304
SW301
B
A
TIMER SW.
COM
S301 XA 3P
C121 1000P/50V
R143 100K
2SC3402×2
Q119
Q118
R190 10K
R189 10K
LED 4
LED 3
LED 2
LED 1
180W
360W
900W
1800W
R303 270Ω
R304 270Ω
R302 1K
R301 1K
D302
D301
360W
900W
180W
1800W
D101
C111 1μ/50V
Q114 C3399
Q113 A1348
R142 560Ω
D102
D103
Q115 C3917
4.7K
-12V
Q112 A1574
Q111 A1574
Q121 A1574
Q120 A1574
22K
D104
D105
D106
D107
RL3
RL4
RL5
RL6
S106 XA 6P
R141 2.7K
R140 2.7K
R164 2.7K
R163 2.7K
D145
D146
D147
D148
CB102 1000P×5
Q110 A1348
Q109 A1348
Q108 C3402
Q107 C3402
R135 4.7K
R138 R139 270Ω×2
R136 R137 270Ω×2
D116
D115
RL2
RL1
-16V
-30V
-35V
ZD102 RD13ESB2
C123 0.01μ/50V
D114
Q106 A1503
R131 1K
2.2K
C110 1μ/50V
R133 47K
R132 10K
ZD101 RD3.9ESB1

CONTROL CIRCUIT BOARD

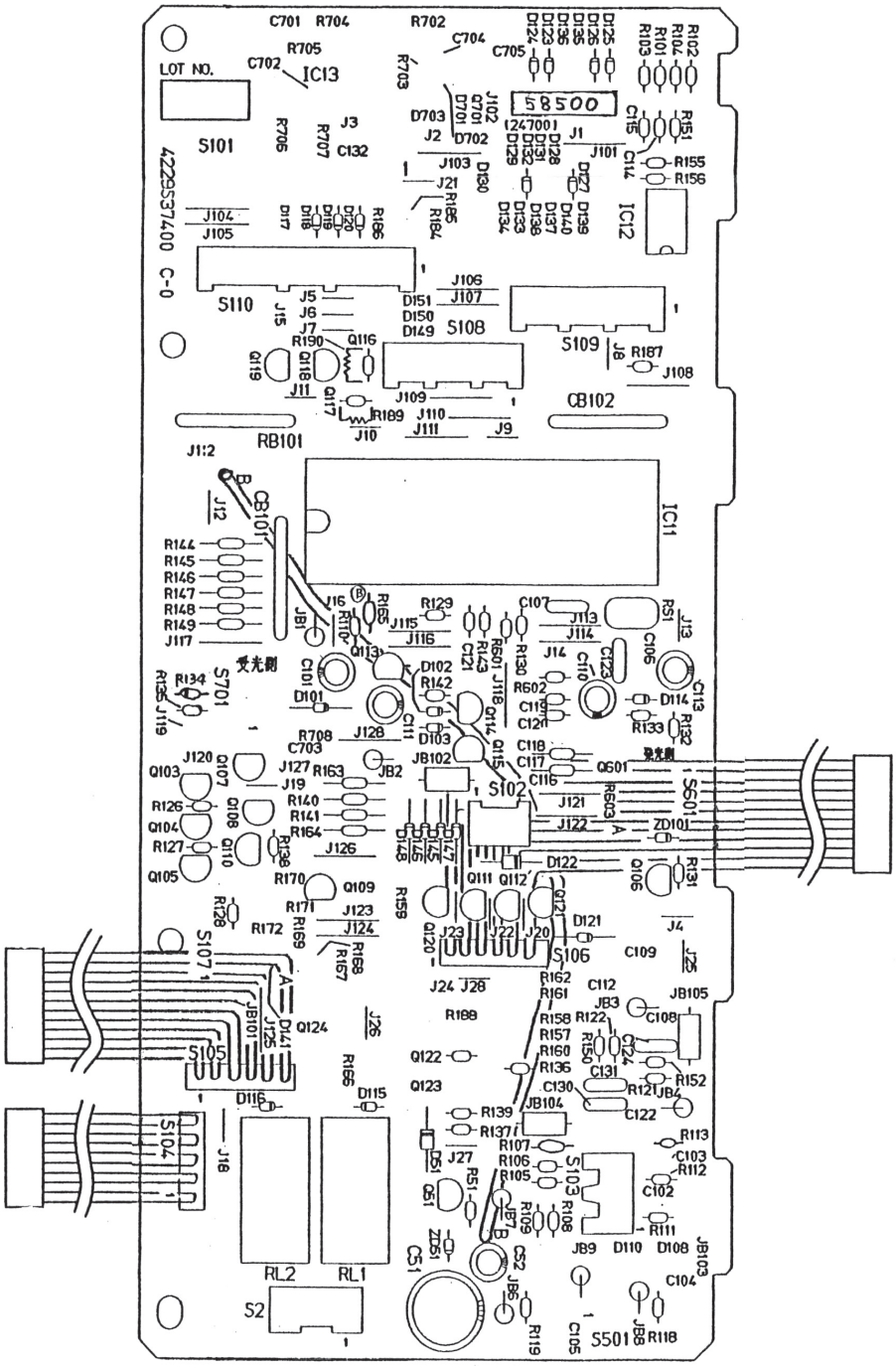


Figure 12

SANYO Electric Co.,Ltd.
OSAKA Japan